44.

The Office Action acknowledges that the specification enables making and using polynucleotides encoding SEQ ID NO:1. Office Action at page 2, second paragraph from the end. To expedite prosecution, independent claims 22, 31, 35, 37, 40, and 44 have been amended to recite only a human fibroblast growth factor receptor comprising the amino acid sequence shown in SEQ ID NO:1.

Applicants respectfully request withdrawal of the rejection.

The Rejection of Claims 22, 23, 25, 31-35, 37, and 40-47 Under 35 U.S.C. § 112, first paragraph

Claims 22, 23, 25, 31-35, 37, and 40-47 stand rejected under 35 U.S.C. § 112, first paragraph, as not sufficiently described. Claims 23, 25, 32, 41-43, and 45-47 have been canceled, mooting their rejection. Applicants respectfully traverse the rejection of claims 22, 31, 33-35, 37, 40, and 44.

The Office Action acknowledges that the specification provides a written description of SEQ ID NO:1. To expedite prosecution, independent claims 22, 31, 35, 37, 40, and 44 have been amended to recite only a human fibroblast growth factor receptor comprising the amino acid sequence shown in SEQ ID NO:1.

Applicants respectfully request withdrawal of the rejection.

The Rejection of Claims 22, 23, 25, 31-35, 37, and 40-47 Under 35 U.S.C. § 112, second paragraph

Claims 22, 23, 25, 31-35, 37, and 40-47 stand rejected under 35 U.S.C. § 112, second paragraph, as indefinite. Claims 23, 25, 32, 41-43, and 45-47 have been canceled, mooting their rejection. Applicants respectfully traverse the rejection of claims 22, 31, 33-35, 37, 40, and 44.

The Office Action objects to the recitation "immunoglobulinlike domains." Because independent claims 22, 31, 35, 37, 40, and 44 have been amended to recite only a human fibroblast growth factor receptor comprising the amino acid sequence shown in SEQ ID NO:1 (which inherently contains immunoglobulin-like domains), the recitation has been deleted as unnecessary.

Applicants respectfully request withdrawal of the rejection.

The Rejection of Claims 22, 23, 25, 31-35, 37, and 40-47 Under 35 U.S.C. § 102(a)

Claims 22, 23, 25, 31-35, 37, and 40-47 stand rejected under 35 U.S.C. § 102(a) as anticipated by Johnson *et al.*, *Mol. Cell. Biol. 10*, 4728-36, 1990 ("Johnson"). Claims 23, 25, 32, 41-43, and 45-47 have been canceled, mooting their rejection. Applicants respectfully traverse the rejection of claims 22, 31, 33-35, 37, 40, and 44.

A printed publication that antedates an invention under 35 U.S.C. § 102 must disclose each element of the invention. *Kalman v. Kimberly-Clark Corp.*, 218 U.S.P.Q. 781, 789 (Fed. Cir. 1983), *cert. denied*, 465 U.S. 1026 (1984). Johnson is cited as teaching a protein with an amino acid sequence that is 99.6% identical to SEQ ID NO:1. As amended, each of independent claims 22, 31, 35, 37, 40, and 44 recites only an hFGFr protein comprising the amino acid sequence shown in SEQ ID NO:1. Johnson does not teach such an hFGFr. Thus, Johnson does

not anticipate the subject matter of claims 22, 31, 33-35, 37, 40, or 44.

Applicants respectfully request withdrawal of the rejection.

The Rejection of Claims 22, 23, 25, 31-35, and 37 Under 35 U.S.C. § 102(b)

Claims 22, 23, 25, 31-35, and 37 stand rejected under 35 U.S.C. § 102(b) as anticipated by Ruta *et al.*, *Oncogene 3*, 9-15, 1988 ("Ruta"). Claims 23, 25, and 32 have been canceled, mooting their rejection. Applicants respectfully traverse the rejection of claims 22, 31, 33-35, and 37.

Ruta is cited as teaching a protein with an amino acid sequence that is 99.6% identical to SEQ ID NO:1. As amended, each of independent claims 22, 31, 35, and 37 recites only an hFGFr protein comprising the amino acid sequence shown in SEQ ID NO:1. Ruta does not teach such an hFGFr. Thus, Ruta does not anticipate the subject matter of claims 22, 31, 33-35, or 37.

Applicants respectfully request withdrawal of the rejection.

The Rejection of Claims 22, 23, 25, 31-35, 37, and 40-47 Under 35 U.S.C. § 102(a)

Claims 22, 23, 25, 31-35, 37, and 40-47 stand rejected under 35 U.S.C. § 102(a) as anticipated by Dionne *et al.*, *EMBO J. 9*, 2685-92, 1990 ("Dionne"). Claims 23, 25, 32, 41-43, and 45-47 have been canceled, mooting their rejection. Applicants respectfully traverse the rejection of claims 22, 31, 33-35, 40, and 44.

Dionne is cited as teaching a protein with an amino acid sequence that is 99.6% identical to SEQ ID NO:1. As amended, each of independent claims 22, 31, 35, 40, and 44 recites only an hFGFr protein comprising the amino acid sequence shown in SEQ ID NO:1. Dionne does not teach such an hFGFr. Thus, Dionne does not anticipate the subject matter of claims 22, 31, 33-

35, 40, or 44.

Applicants respectfully request withdrawal of the rejection.

The Rejection of Claims 22, 23, 25, 31-35, and 37 Under 35 U.S.C. § 102(a)

Claims 22, 23, 25, 31-35, and 37 stand rejected under 35 U.S.C. § 102(a) over Isacchi *et al., Nucl. Acids. Res. 18*, 1906, 1990 ("Isacchi"). Claims 23, 25, and 32 have been canceled, mooting their rejection. Applicants respectfully traverse the rejection of claims 22, 31, 33-35, and 37.

Isacchi is cited as teaching a protein with an amino acid sequence that is 99.6% identical to SEQ ID NO:1. As amended, each of independent claims 22, 31, 35, and 37 recites only an hFGFr protein comprising the amino acid sequence shown in SEQ ID NO:1. Isacchi does not teach such an hFGFr. Thus, Isacchi does not anticipate the subject matter of claims 22, 31, 33-35, or 37.

Applicants respectfully request withdrawal of the rejection.

The Rejection of Claims 40-47 Under 35 U.S.C. § 103(a)

Claims 40-47 stand rejected under 35 U.S.C. § 103(a) as obvious over two combinations of references: either Isacchi or Ruta in view of Dionne. Claims 41-43 and 45-47 have been canceled, mooting their rejection. Applicants respectfully traverse the rejection of claims 40, and 44.

The U.S. Patent and Trademark Office must make three showings to establish a *prima facie* case that claims 40, and 44 are obvious:

> First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to

> one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

Manual of Patent Examining Procedure, 8th ed., § 2142. Here, a *prima facie* case of obviousness has not been made because the cited combination does not teach or suggest all the claim limitations.

As amended, each of claims 40 and 44 recites a human fibroblast growth factor receptor comprising the amino acid sequence shown in SEQ ID NO:1. Neither Isacchi, Ruta, nor Dionne teaches or suggests a human fibroblast growth factor receptor comprising the amino acid sequence shown in SEQ ID NO:1. Thus, the teachings of Isacchi or Ruta, even if combined with those of Dionne, cannot render the subject matter of claims 40 or 44 obvious.

Applicants respectfully request withdrawal of the rejections.

Please address all correspondence to Lisa Alexander, Chiron Corporation, Intellectual Property Dept., R440, 4560 Horton Street, Emeryville, CA 94608-2916.

Respectfully submitted,

Dated: February 3, 2003

By: Lisa M. Hemmendinger

Lisa M. Hemmendinger
Registration No. 42,653

BANNER & WITCOFF, LTD.
1001 G Street, N.W.
Eleventh Floor
Washington, D.C. 20001-4597
(202) 508-9100

Appendix 1. Version of the amended claims with markings to show changes made

22. (twice amended) A composition consisting essentially of a polynucleotide having a sequence encoding a human fibroblast growth factor receptor (hFGFr) as shown in SEQ ID NO:1 ~~comprising three immunoglobulinlike domains, wherein the sequence is selected from the group consisting of:~~

~~(a) the sequence of a cDNA molecule or complement obtainable as follows:~~

~~providing oligonucleotide probes~~

~~ATAACGGACGTTGTAGCGTCCAATTGTGTG (SEQ ID NO:7) and~~

~~GCGGCGTTTGACTGCGGCATTGGCAAGCTG (SEQ ID NO:8);~~

~~providing a cDNA library of candidates;~~

~~contacting the cDNA library with the probes under conditions that permit hybridization; and~~

~~identifying and isolating the candidate that hybridizes to both oligonucleotides probes;~~

~~(b) the sequence encoding SEQ ID NO: 1;~~

~~(c) a sequence encoding hFGFr having a sequence substantially the same as the sequence of (a), wherein the differences between the sequences of (c) and (a) are confined to changes in nucleotide sequence which do not result in a change in the corresponding encoded amino acid of hFGFr.~~

31. (amended) A composition consisting essentially of a recombinant human fibroblast growth factor receptor (hFGFr) vector comprising:

(a) an origin of replication; and

(b) a nucleic acid encoding means for hFGFr comprising ~~three immunoglobulinlike domains,~~ the amino acid sequence shown in SEQ ID NO:1,

wherein the origin of replication is operably linked to the nucleic acid encoding means.

33. (amended) The composition of claim 31, wherein the recombinant vector is an expression vector capable of producing the ~~a~~ human fibroblast growth factor receptor ~~comprising three immunoglobulinlike domains~~ in a host cell, wherein the vector further comprises a promoter operable in the host cell and operably linked to the nucleic acid encoding means.

35. (amended) A composition consisting essentially of a recombinant human fibroblast growth factor receptor (hFGFr) vector comprising

(a) an origin of replication; and

(b) a nucleic acid encoding means for an hFGFr comprising an extracellular region, wherein the hFGFr comprises the amino acid sequence shown in SEQ ID NO:1, wherein the origin of replication is operably linked to the nucleic acid encoding means.

37. (twice amended) A method of isolating a polynucleotide having a sequence encoding a human fibroblast growth factor receptor (hFGFr) comprising the amino acid sequence shown in SEQ ID NO:1 ~~three immunoglobulinlike domains~~, wherein the method comprises:

providing oligonucleotide probes

ATAACGGACCTTGTAGCCTCCAATTCTGTG (SEQ ID NO:7) and

GCGGCGTTTGAGTCCGCCATTGGCAAGCTG (SEQ ID NO:8),

providing a cDNA library of candidates,

contacting the cDNA library with the probes under conditions that permit hybridization, and

identifying and isolating the candidate that hybridizes to both oligonucleotide probes.

40. (amended) A host cell comprising a recombinant human fibroblast growth factor receptor (hFGFr) vector comprising:

(a) an origin of replication operable in the host cell; and

(b) a nucleic acid encoding means for an hFGFr comprising the amino acid sequence shown in SEQ ID NO:1 ~~three immunoglobulinlike domains~~,

wherein the origin of replication is operably linked to the nucleic acid encoding means.

44. (amended) A method of producing a human fibroblast growth factor receptor (hFGFr) ~~comprising three immunoglobulinlike domains~~, comprising:

(a) providing a host cell that comprises

an origin of replication operable in the host cell, and

a nucleic acid encoding means for an hFGFr comprising the amino acid sequence shown in SEQ ID NO:1 ~~three immunoglobulinlike domains~~,

wherein the origin of replication is operably linked to the nucleic acid encoding means;

(b) culturing the host cell in a suitable culture medium and under suitable conditions permitting the expression of the nucleic acid encoding means; and

(c) recovering the polypeptide from the medium and cells.

Appendix 2. Clean copy of all pending claims after entry of the amendments

22. (twice amended) A composition consisting essentially of a polynucleotide having a sequence encoding a human fibroblast growth factor receptor (hFGFr) as shown in SEQ ID NO:1.

31. (amended) A composition consisting essentially of a recombinant human fibroblast growth factor receptor (hFGFr) vector comprising:

(a) an origin of replication; and

(b) a nucleic acid encoding means for an hFGFr comprising the amino acid sequence shown in SEQ ID NO:1,

wherein the origin of replication is operably linked to the nucleic acid encoding means.

33. (amended) The composition of claim 31, wherein the recombinant vector is an expression vector capable of producing the human fibroblast growth factor receptor in a host cell, wherein the vector further comprises a promoter operable in the host cell and operably linked to the nucleic acid encoding means.

34. The composition of claim 31, wherein the recombinant vector is a nonlytic viral vector capable of infecting a host cell, wherein the vector comprises a viral origin of replication.

35. (amended) A composition consisting essentially of a recombinant human fibroblast growth factor receptor (hFGFr) vector comprising

(a) an origin of replication; and

(b) a nucleic acid encoding means for an hFGFr comprising an extracellular region, wherein the hFGFr comprises the amino acid sequence shown in SEQ ID NO:1, wherein the origin of replication is operably linked to the nucleic acid encoding means.

37. (twice amended) A method of isolating a polynucleotide having a sequence encoding a human fibroblast growth factor receptor (hFGFr) comprising the amino acid sequence

shown in SEQ ID NO:1, wherein the method comprises:

providing oligonucleotide probes

ATAACGGACCTTGTAGCCTCCAATTCTGTG (SEQ ID NO:7) and

GCGGCGTTTGAGTCCGCCATTGGCAAGCTG (SEQ ID NO:8),

providing a cDNA library of candidates,

contacting the cDNA library with the probes under conditions that permit hybridization, and

identifying and isolating the candidate that hybridizes to both oligonucleotide probes.

40. (amended) A host cell comprising a recombinant human fibroblast growth factor receptor (hFGFr) vector comprising:

(a) an origin of replication operable in the host cell; and

(b) a nucleic acid encoding means for an hFGFr comprising the amino acid sequence shown in SEQ ID NO:1,

wherein the origin of replication is operably linked to the nucleic acid encoding means.

44. (amended) A method of producing a human fibroblast growth factor receptor (hFGFr), comprising:

(a) providing a host cell that comprises

an origin of replication operable in the host cell, and

a nucleic acid encoding means for an hFGFr comprising the amino acid sequence shown in SEQ ID NO:1,

wherein the origin of replication is operably linked to the nucleic acid encoding means;

(b) culturing the host cell in a suitable culture medium and under suitable conditions permitting the expression of the nucleic acid encoding means; and

(c) recovering the polypeptide from the medium and cells.